

## **HIGH-RESOLUTION AND HIGH-POWER ULTRASOUND METHOD AND DEVICE FOR SUBMARINE EXPLORATION**

### **ABSTRACT OF THE DISCLOSURE**

A method for underwater exploration which makes use of a parabolic transmitter (1) and a parabolic receiver (3), the transmitter (1) and the receiver (3) being both open at their lower side and immersed below the seawater surface. The electric breakdown discharge occurring between both electrodes (15) of the transmitter (1) generates a primary signal and a pulse which is called "cavitation bubble pulse." The method consists in enhancing the signal (23) produced by the implosion of the cavitation bubble, to the detriment of the primary signal (13"), by appropriately adjusting the value of the "spark gap" (distance  $d$  between the electrodes) so as to optimize the delay time ( $t$ ) and consequently the acoustic efficiency of the transmitter, by transferring the electrostatic energy to the bubble implosion signal.

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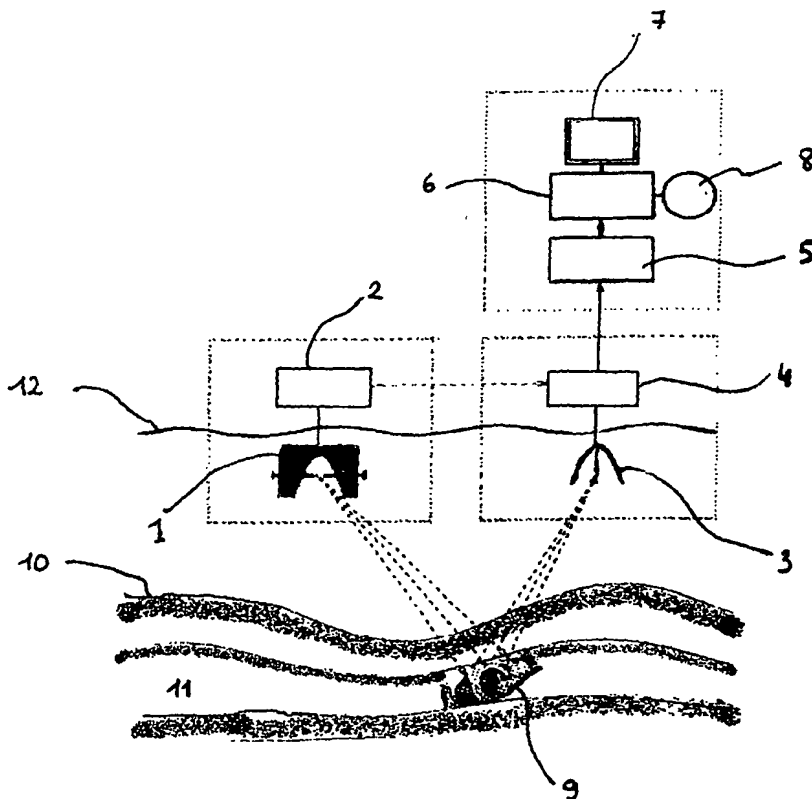
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- (71) Applicant and  
(72) Inventor: **CANNELLI, Giovanni, Bosco** [IT/TT]; c/o I-  
stituto de Acustica O.M. Corbino, Via Fosso del Cavaliere  
100, I-00133 Roma (IT).
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(57) Abstract: A method for underwater exploration which makes use of a parabolic transmitter (1) and a parabolic receiver (3), the transmitter (1) and the receiver (3) being both open at their lower side and immersed below the seawater surface. The electric breakdown discharge occurring between both electrodes (15) of the transmitter (1) generates a primary signal and a pulse which is called "cavitation bubble pulse". The method consists in enhancing the signal (23) produced by the implosion of the cavitation bubble, to the detriment of the primary signal (13''), by appropriately adjusting the value of the "spark gap" (distance d between the electrodes) so as to optimise the delay time (t) and consequently the acoustic efficiency of the transmitter, by transferring the electrostatic energy to the bubble implosion signal.



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